

CLAIMS

1. A method for manufacturing an SOI wafer comprising the steps of:
forming an insulating layer on at least one wafer of two starting
5 wafers; and
adhering the one wafer to the other wafer without an adhesive,
wherein there is used as the starting wafer a wafer having no line
defect on a surface thereof.
2. A method for manufacturing an SOI wafer comprising the steps of:
10 forming an insulating layer on at least one wafer of the two starting
wafers; and
adhering the one wafer to the other wafer without an adhesive,
wherein the starting wafer is subjected to high temperature heat
treatment in advance.
- 15 3. The method for manufacturing an SOI wafer according to claim 2,
wherein the high temperature heat treatment is carried out at a high
temperature of 1100°C or higher.
4. The method for manufacturing an SOI wafer according to any of
claims 1 to 3, wherein the method comprises the steps of:
20 forming an insulating layer on at least one wafer of the two starting
wafers;
implanting hydrogen ions or rare gas ions through the upper
surface of the one wafer to form a micro-bubble layer in the interior of the one
wafer; thereafter
25 bringing the surface of the one wafer through which the ions have

been implanted into close contact with the other wafer through the insulating layer interposed therebetween; then

delaminating a part of the one wafer with the micro-bubble layer as a cleavage plane by applying heat treatment for the rest thereof to become a
5 thin film; and

bonding strongly the one wafer in the form of a thin film to the other wafer through the insulating layer interposed therebetween by applying further heat treatment.

5. The method for manufacturing an SOI wafer according to any of
10 claims 1 to 4, wherein surfaces of wafers each to be used as the starting wafer of the SOI wafer are inspected with respect of a line defect to sort line defect free wafers for use.

6. The method for manufacturing an SOI wafer according to claim 5,
wherein the inspection of the line defect is carried out with a laser microscope
15 with a confocal optical system.